

[0197] It will be apparent to those skilled in the art that various modifications and variations can be made in the compositions and methods of the disclosed subject matter without departing from the spirit or scope of the disclosed subject matter. Thus, it is intended that the disclosed subject matter include modifications and variations that are within the scope of the appended claims and their equivalents. Various publications, patents and patent applications are cited herein, the contents of which are hereby incorporated by reference in their entireties

What is claimed is:

1. A method of detecting cellular synapse formation or the activity of a multispecific antibody capable of inducing cellular synapse formation comprising:

- (a) contacting a multispecific antibody capable of binding to a first antigen and a second antigen with a first cell expressing the first antigen and a second cell expressing the second antigen, wherein a cellular synapse is formed between the first cell and the second cell upon binding of the multispecific antibody to the first and second antigens; and
- (b) measuring activation of the first cell, wherein activation of the first cell indicates cellular synapse formation or that the multispecific antibody is capable of inducing cellular synapse formation.

2. The method of claim 1, wherein measuring activation of the first cell comprising measuring at least one biomarker indicative of activation.

3. The method of claim 1, wherein the at least one biomarker is a cell surface molecule.

4. The method of claim 1, wherein the at least one biomarker is selected from the group consisting of CD62L, CD69, and a combination thereof.

5. The method of claim 1, wherein the first antigen is CD3.

6. The method of claim 1, wherein the second antigen is a tumor antigen selected from the group consisting of HER2, LYPD1, LY6G6D, PMEL17, LY6E, EDAR, GFRA1, MRP4, RET, Steap1, TenB2, CD20, FcRH5, CD19, CD33, CD22, CD79A and CD79B.

7. The method of claim 1, wherein measuring activation of the first cell comprises detecting a reporter that is induced upon the activation of the first cell.

8. The method of claim 1, wherein the ratio of the first cell to the second cell is between about 1:10 and about 50:1 or the ratio of the first cell to the second cell is between about 1:10 and about 10:1.

9. The method of claim 1, wherein the average expression of the second antigen on the second cell is at least about 1,000 molecules per cell or at least about 10,000 molecules per cell.

10. The method of claim 1, wherein the average distance between the first cell and the second cell is no more than about 0.3 mm or no more than about 0.1 mm.

11. A system for determining cellular synapse formation of a multispecific antibody that binds to a first antigen and a second antigen, comprising:

- (a) a first cell expressing the first antigen;
- (b) a second cell expressing the second antigen; and
- (c) a means for measuring activation of the first cell, wherein a cellular synapse is formed between the first cell and the second cell upon binding of the multispecific antibody to the first antigen and the second antigen, and wherein the cellular synapse formation activates the first cell.

12. The system of claim 11, wherein the means for measuring activation of the first cell comprises at least one biomarker indicative of activation.

13. The system of claim 11, wherein the at least one biomarker is a cell surface molecule.

14. The system of claim 11, wherein the at least one biomarker is selected from the group consisting of expression of CD62L, CD69, and a combination thereof.

15. The system of claim 11, wherein the first antigen is CD3.

16. The system of claim 11, wherein the second antigen is a tumor antigen selected from the group consisting of HER2, LYPD1, LY6G6D, PMEL17, LY6E, EDAR, GFRA1, MRP4, RET, Steap1, TenB2, CD20, FcRH5, CD19, CD33, CD22, CD79A and CD79B.

17. The system of claim 11, wherein the means for measuring activation of the first cell comprises a reporter gene in the first cell, where expression of the reporter gene is induced upon the activation of the first cell.

18. The system of claim 11, wherein the ratio of the first cell to the second cell is between about 1:10 and about 50:1 or the ratio of the first cell to the second cell is between about 1:10 and about 10.

19. The system of claim 11, wherein the average expression of the second antigen on the second cell is at least about 1,000 molecules per cell or at least about 10,000 molecules per cell or.

20. The system of claim 11, wherein the average distance between the first cell and the second cell is no more than about 0.3 mm or no more than about 0.1 mm.

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